

REMARKS

Claims 9, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,150,426 to Curtin in view of U.S. Patent No. 3,085,083 to Schrayer. Claims 9, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Curtin in view of U.S. Patent No. 4,599,386 to Carlson.

Claim 9 has been canceled, and claims 12 and 13 have been amended to depend from claim 10.

Withdrawal of the foregoing rejections is respectfully requested.

Claims 9-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Curtin in view of GB 1,210,794 (GB '794).

Applicants respond as follows.

The stabilized fluoropolymer of claim 10 is obtained via polymerization of an acid-derived group-containing perhalovinyl ether and tetrafluoroethylene. The number [X] of main chain terminal $-CF_3$ groups per 1×10^5 main chain carbon atoms of a hydrolyzate of the stabilized fluoropolymer is not smaller than 10, determined by solid state ^{19}F nuclear magnetic resonance spectrometry.

Turning to the cited prior art, GB '794 teaches the stabilization of fluoropolymers containing pendant $-SO_2F$ groups where the end groups are converted into $-CF_3$ groups by fluorination such that carboxylates are not detected via IR after fluorination (Table I).

However GB '794 does not disclose the number of carboxylates determined by solid state ^{19}F nuclear magnetic resonance spectrometry. Carboxylate must be detected when using solid state ^{19}F nuclear magnetic resonance spectrometry.

GB '794 discloses the stabilization of fluoropolymers containing pendant $-\text{SO}_2\text{F}$ groups by fluorination. The fluoropolymers containing pendant $-\text{SO}_2\text{F}$ groups have a moisture content higher than 500 ppm by mass. This is because the fluoropolymer absorbs moisture from the air. Comparative Example 1 of the specification confirms moisture absorbency of the fluoropolymer. Indeed, Curtin discloses that the copolymer of Example 1 contained 13% by weight of absorbed water. See column 13, lines 59-60. The fluoropolymer having a high moisture content cannot be fluorinated sufficiently, because the fluorination is believed to be inhibited by the moisture.

In addition, GB '794 does not disclose controlling the moisture content and drying the fluoropolymer.

Therefore, the carboxylate must be detected when using solid state ^{19}F nuclear magnetic resonance spectrometry in GB '794.

Rather, GB '794 teaches a fluoropolymer having not more than 10 carboxylates, as shown by Comparative Example 4 of the specification. In Comparative Example 4, the fluoropolymer of the Comparative Example 1 has 6.7 of the number [X] of main chain terminal $-\text{CF}_3$ groups after fluorination.

Therefore, the fluoropolymer of claim 10 is patentable over the combined disclosures of Curtin and GB '794, and withdrawal of the foregoing rejection is respectfully requested.

Withdrawal of all rejections and allowance of claims 10-13 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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